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ON SOME NEW EOCENE FOSSILS FROM THE CLAIBORNE MARINE  
FORMATION OF ALABAMA.

BY ANGELO HEILPRIN.

The following species of fossils (with the exception of *Rostellaria Whitfieldi*) were picked out from an accumulated mass of Claiborne sand and shell, deposited in the American Museum of Natural History, New York City, and being of more than ordinary interest, as in part pertaining to genera hitherto not recognized as belonging to the formation, I have deemed them worthy of description.

**TEINOSTOMA**, H. & A. Adams.

*Teinostoma rotula*, nob. Pl. xiii., fig. 1.

Shell orbicular, depressed; polished; whorls three, body-whorl with an impressed line immediately below the suture; umbilicus small, surrounded by a broad callous area; aperture nearly circular; inner lip expanded into a callus near the umbilical region.

Diameter .2 inch.

Claiborne, Alabama.

This is the first species of *Teinostoma* described as such existing in the Eocene formations of the United States. Mr. Lea's *Rotella nana* (*Umbonium*, Conrad), also from Claiborne, which I have not had an opportunity to examine, may prove to be a *Teinostoma*.

**DELPHINULA**, Roissy.

*Delphinula solaroides*, nob. P. xiii., fig. 2.

Shell turbinate, depressed, broadly umbilicate; whorls four, channeled below the suture, and ornamented with obtuse ribs radiating from about the centre of the upper surface; umbilicus with a central unrolling prominent crenulated line, and intermediate finer lines; margin crenulated; peristome continuous, trumpet shaped. Nacreous.

Diameter  $\frac{1}{4}$  inch.

Claiborne, Ala.

This species could readily be mistaken for a *Solarium*, from all species of which, however, it is distinguished by its pearly iridescence.

**SOLARIUM**, Lamarek.

**Solarium striato-granulatum**, nob. Pl. xiii., fig. 3.

Shell conical, depressed; whorls five, slightly convex, and ornamented with four principal revolving lines of granules; margin acute, crenulated, and carinated only on the inferior surface; base with three prominent crenulated lines surrounding the umbilicus, and with about three or four almost simple lines.

Diameter  $\frac{3}{4}$  inch.

Claiborne, Ala.

**NATICA**, (Adans.) Lam.

**Natica bi-sulcata**, nob. Pl. xiii., fig. 4.

Shell subglobose; spire but slightly elevated; whorls four, smooth, the body-whorl with radiating sulci on the summit; mouth semi-lunate, about  $\frac{3}{4}$  the length of shell; columella slightly thickened, the callus reflected above the middle; umbilicus broad, doubly grooved, the grooves transversely striated.

Length .3 inch.

Claiborne, Ala.

This species differs mainly from the *N. magno-umbilicata* of Lea in having the umbilicus doubly grooved.

**ODOSTOMIA**, Fleming.

**Odostomia lævigata**, nob. Pl. xiii., fig. 5.

Only a fragment of this species has come to my observation, but its characters are sufficiently defined to distinguish it from all the other species of *Odostomia* existing in our tertiary formations. It mainly differs from the *Actæon* (*Odostomia*) *melanellus* of Lea in the subangulate form of the body-whorl, and in the columellar plait, which in our species is transverse, and not oblique.

Length ?.

Claiborne, Ala.

**TORNATELLA**, Lamarek.

**Tornatella bicincta**, nob. Pl. xiii., fig. 6.

Shell ovate, spire elevated; whorls about six, the body-whorl with numerous revolving lines closely beset with punctures, and two broad smooth bands on the superior portion; two or three of

the remaining whorls also with two smooth bands; mouth narrow, about  $\frac{3}{8}$  the length of shell.

Length .4 inch.

Claiborne, Ala.

This species differs from the *Actæon* (*Tornatella*) *lineatus* of Lea (*A. idoneus*? Conrad) in having two smooth bands on the upper portion of the body-whorl instead of one. Mr. Lea mentions having in his cabinet a species from the Paris basin also with two bands, but I fail to discover the same described in the work of M. Deshayes.

**PISANIA, Biven.**

*Pisania bucciniformis*, nob. Pl. xiii., fig. 7.

A fragment only of this, the first described species of true *Pisania* existing in the Eocene formations of the United States has come to my notice. The body-whorl is about  $\frac{2}{3}$  inch in length, striated on the inferior portion, and with a slightly impressed line beneath the suture; mouth about  $\frac{3}{4}$  length of body-whorl; canal almost obsolete; columella arcuate, wrinkled at base; outer lip striated within by about seven elevated ridges.

Length ?

Claiborne, Ala.

The *Pisania Claibornensis* of Whitfield (Am. Journ. Conchol., vol. i., p. 259) appears from the description and figure to be more nearly related to *Triton*.

**CONUS, L.**

*Conus pulcherrimus*, nob. Pl. xiii., fig. 8.

Shell conical; spire elevated; whorls about seven, slightly concave above, granularly crenulated on the angle, and transversely striated; a prominent simple line below the angle, and one of granulations beneath the suture. Aperture?

Length about  $\frac{1}{2}$  inch.

Claiborne, Ala.

**PLEUROTOMA, Lam.**

*Pleurotoma insignifica*, nob. Pl. xiii., fig. 9.

Shell fusiform, with prominent revolving lines below the middle of the whorl; spire elevated; whorls about five, angular; canal short, obliquely curved; mouth contracted.

Length  $\frac{1}{4}$  inch.

Claiborne, Ala.

The description and figure of *Fusus nanus* as given by Lea in his "Contributions," agree in all essential respects with the above. No mention is made of the sinuated lines of growth peculiar to the *Pleurotomæ*, which in our specimens are very distinct. Although I have not had an opportunity to examine Mr. Lea's specimens, it appears to me, nevertheless, highly probable that his *Fusus* will prove to be a *Pleurotoma*.

**Pleurotoma denticula**, Baterot. Pl. xiii., fig. 10.

This species, which is one of the most widely diffused of all fossil *Pleurotomæ*, has to my knowledge not been hitherto described as occurring in any American formation. The *P. nodocarinata*, Gabb (unfortunately very poorly figured), in the collections of the Academy belongs to this species. Specimens are to be found also in the Claiborne accumulation of the American Museum of Natural History, New York.

**MELANIA**, Lam.

**Melania Claibornensis**, nob. Pl. xiii., fig. 11.

Shell elongated, turreted; whorls eight, of which the first three are smooth, and the rest furnished with longitudinal folds, those on the body-whorl terminating at about the middle; folds cut by numerous deeply impressed revolving lines, giving a somewhat imbricated appearance; mouth elongated, oval contracted above, and expanding at the base; columella broad, flattened.

Length .3 inch.

Claiborne, Ala.

This species, to which I have provisionally applied the specific name of *Claibornensis*, is doubly interesting as being the only essentially fresh-water gasteropod found in the Claiborne marine formation and of being at the same time most intimately related to a species found in the Paris basin, *Melania mixta*, Deshayes. It agrees essentially with all the characters as given by Deshayes, and on comparison with his specimens will in all probability prove to be identical.

**RISSOINA**, D'Orbigny.

**Rissoina plicato-varicosa**, nob. Pl. xiii., fig. 12.

Shell sub-turreted; whorls about seven, convex, ornamented with numerous longitudinal folds (on the body-whorl from 10 to 12), and disfigured by several prominent varices; revolving lines

numerous, less prominent on the middle of the whorls; aperture ovate, produced into a short canal.

Length  $\frac{1}{4}$  inch.

Claiborne, Ala.

This species closely resembles, but is less slender, than the *Rissoa inchoata*. Desh., of the Paris basin.

**MESOSTOMA**, Deshayes.

*Mesostoma rugosa*, nob. Pl. xiii., fig. 13.

Shell conico-turbinate; whorls about seven, scalariform, the first three smooth, the rest ornamented with oblique longitudinal plications, which are crossed by five prominent and a number of lesser revolving ridges, giving the whole a cancellate appearance; the folds on the body-whorl cease abruptly below the middle; aperture sub-circular, dilated, and produced into a short oblique canal; outer lip somewhat crenulated by the terminations of the revolving ridges.

Length .4 inches.

Claiborne, Ala.

Four species in all are catalogued as belonging to this genus, all from the Eocene of France. The above species differs from the *M. grata*, Desh., of the Paris basin only in the number of its revolving ridges. The *Cerithioderma prima* of Conrad, from the American Eocene, is a *Mesostoma*.

*Note.*—There is some difficulty in determining the priority in the institution of the genera *Mesostoma* and *Cerithioderma*. Tate (Appendix to Woodward's "Manual," 1868) quotes the genus *Mesostoma* from the year 1864, whereas that portion of Deshayes's work, wherein the genus is described, bears the date of 1858. This is the second year of the publication of the entire work, and as the first volume (Lamellibranchiata) was not completely issued until 1860, it is highly probable that the genus was not characterized prior to that year. Conrad published his genus *Cerithioderma* in March, 1860 (J. A. N. S., vol. iv., 2d series), as founded upon a single species *C. prima*, but as his characterization is vague and very meagre, it appears more natural to accept the genus of Deshayes, which has already been accepted by most conchologists.

**ROSTELLARIA, Lam.**

**Rostellaria Whitfieldi**, nob. Pl. xiii., fig. 14.

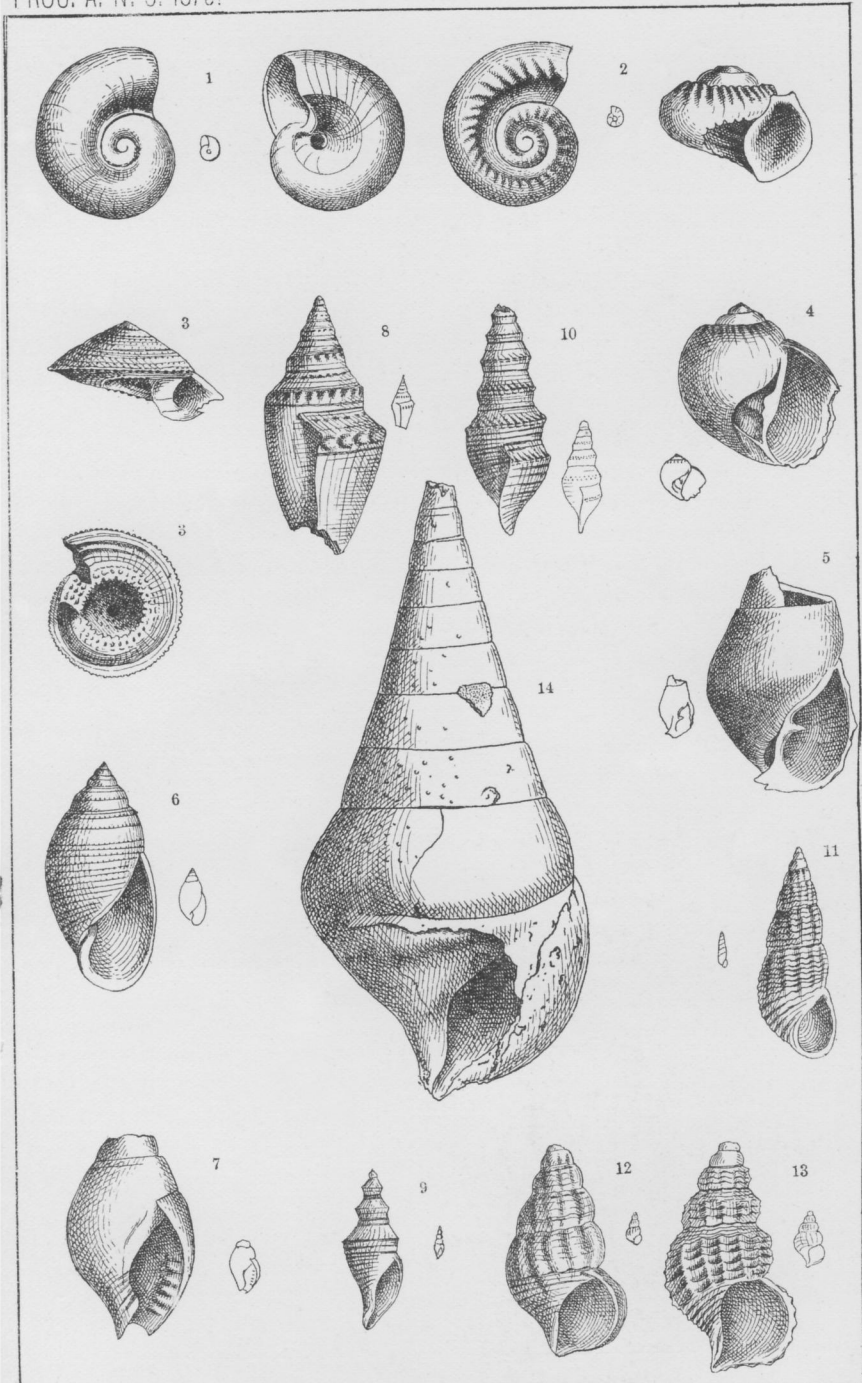
Shell fusiform; spire tapering, consisting of about nine flattened volutions; body-whorl sub-angulate beneath; columella flexuous, with traces of an obtuse fold; outer lip with a swollen prominence in the apertural region; wing?

Length 3-4 inches.

Claiborne, Ala.

Named in honor of R. P. Whitfield, Esq., the distinguished American paleontologist and colaborer with Prof. James Hall in the great work on the paleontology of the State of New York.

Two specimens of this species, both unfortunately bereft of their wings, are in possession of the American Museum of Natural History of New York. Their characters are so decidedly at variance with those of any other American Eocene *Rostellaria*, that we feel no hesitation in applying to them a specific name, although the broken nature of our specimens necessitates an incomplete description. Allied species occur in the London clay and in the Paris basin.



A. H. del.

HEILPRIN ON EOCENE FOSSILS.